

WHAT IS CLAIMED IS:

Gas. A. 2
1. A method of transmitting a digital signal comprising the
steps of:

5 assembling a data packet comprised of a first data portion,
a start synchronization code and an end synchronization code for
bit synchronization for said first data portion, and an auxiliary
data portion located between said start synchronization code and
said end synchronization code ;

10 said auxilliary data portion comprises a type area indicating
data type of said first data portion; and
transmitting said data packet via a communications network.

2. A method of transmitting a digital signal according to claim
15 1 wherein said first data portion comprises video data.

3. A method of transmitting a digital signal according to claim
1 wherein said first data portion comprises audio data.

20 4. A method of transmitting a digital signal according to claim
1 wherein said auxilliary data portion comprises a byte count

area indicating data volume.

5. A method of transmitting a digital signal according to claim 1 wherein said auxilliary data portion comprises a second data portion.

6. The method as claimed in claim 1 wherein line number area indicating the line number of data is provided at the leading end of said auxilliary data portion.

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7. The method of claim 1 wherein said auxilliary data portion comprises error correction code data for detecting and correcting errors in data of said type area and said byte count area.

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8. The method of claim 4 wherein said auxilliary data portion comprises error correction code data for detecting and correcting errors in data of said byte count area.

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9. The method of claim 1 wherein said first data portion comprises digital video data and said second data portion comprises digital audio data.

9. The method as claimed in claim 1 wherein the digital signal format contains transmission data and reception data.

10. An apparatus for transmitting a digital signal comprising:

5 plurality of data outputting media sources;

plurality of delay adjustment units for respectively adjusting the delay of the data from said media sources;

plurality of rate converting units for converting the data transmission rate of the respective data from the rate converting

10 units into a transmission rate of a transmission channel;

plurality of attribute information processing units for appending the attribute information to the respective data from said rate converting units;

15 multi-media switching unit for optionally selecting data of the respective media sources from the attribute information processing units;

transmission controlling unit for controlling said delay adjustment units, rate converting units, attribute information processing units and said multi-media switching unit; and

20 multiplexing unit for multiplexing plural data from said multi-media switching unit.

11. A device for receiving a digital signal comprising:

demultiplexing unit for demultiplexing plural multiplexed data into media source based data;

5 a demultiplexed media switching unit for switching plural data from the demultiplexing unit into respective suitable media channels;

10 a plurality of attribute information processing unit for processing the plural data switched by said demultiplexed media switching unit based upon the attribute information for these data;

15 a plurality of rate converting units for converting the transmission rate of the respective data from the attribute information processing units into the playback rate for data reproduction;

20 a plurality of delay adjustment units for adjusting the respective data from the plural rate conversion units into optimum delay amounts; and

a plurality of media reproducing units for respectively reproducing the data from the delay adjustment units.

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12. A digital signal transmitting and receiving system

comprising:

a transmitting side;

a receiving side;

5 said transmitting side comprises a plurality of data outputting media sources, a plurality of delay adjustment units for respectively adjusting a delay of the transmission of data from said media sources, a plurality of rate converting units for converting the data transmission rate of the respective data output from said rate converting units into a transmission rate 10 of a transmission channel, a plurality of attribute information processing units for appending the attribute information to the respective data from said rate converting units, a multi-media switching unit for optionally selecting data of the respective media sources from the attribute information processing units, a 15 transmission controlling unit for controlling said delay adjustment units, rate converting units, attribute information processing units and the multi-media switching unit, and a multiplexing unit for multiplexing plural data from said multi-media switching unit; and

20 said receiving side comprises demultiplexing unit for demultiplexing plural multiplexed data to produce media source

based data, demultiplexed media switching unit for switching plural data from said demultiplexing unit into respective suitable media channels, a plurality of attribute information processing unit for processing the plural data switched by said 5 demultiplexed media switching unit based upon the attribute information for these data, a plurality of rate converting units for converting the transmission rate of the respective data from the attribute information processing units into the playback rate for data reproduction, a plurality of delay adjustment units for 10 adjusting the respective data from said rate conversion units into optimum delay duration, a plurality of media reproducing units for respectively reproducing data from said delay adjustment units.

15 13. A digital signal transmission system comprising:
a transmitter for transmitting digital signals;
a receiver for receiving digital signals transmitted from said transmitter;
said transmitter comprises:
20 a plurality of input channels for receiving data from anyone of a plurality of predetermined media sources;

each of said plurality of input channels comprise,
an input for receiving media source data from a
predetermined media source at a predetermined data transmission
rate;

5 first delay for delaying said media source data by a
predetermined duration before outputting same to a first data
transmission rate converter;

said first data transmission rate converter converts the
transmission rate of said media source data from said
10 predetermined data transmission rate to a common data
transmission rate and outputs same to a first attribute data
processor;

said first attribute data processor appends predetermined
attribute data to said media source data and outputs same;

15 multiplexor for multiplexing the output from said plurality
of input channels and outputting a multiplexed signal at a common
data transmission rate to a communication network;

switcher for alternately routing said output from said
attribute data processors of each of said plurality of input
20 channels to said multiplexor;

said receiver comprises:

demultiplexor for receiving a multiplexed data signal at a common data transfer rate from said communication network and demultiplexing said multiplexed signal to produce a plurality of data signals and output same to a plurality of output channels;

5 each of said output channels comprise:

second attribute data decoder for decoding attribute data appended to said data signal;

second data transmission rate convertor for converting the data transmission rate of a said data signal from said common 10 data transmission rate to a predetermined data transmission rate and outputting same to a second delay; and

said second delay provides a predetermined delay to said data signal before outputting same to a predetermined media reproduction device.

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14. A digital signal transmitting device according to claim 13 wherein said media sources comprise video data sources.

15. A digital signal transmitting device according to claim 20 13 wherein said media sources comprise audio data sources.

16. A digital signal transmitting device comprising:

a first and second input channel for receiving data from a first and a second predetermined media source, respectively;

each of said first and second input channels comprise:

5 an input for receiving media source data from a predetermined media source at a predetermined data transmission rate; delay for delaying said media source data by a predetermined duration before outputting same to a data transmission rate converter; said data transmission rate converter converts the transmission rate of said media source data from said predetermined data transmission rate to a common data transmission rate and outputs same to an attribute data processor; said attribute data processor appends predetermined attribute data to said media source data and outputs same;

10 multiplexor for multiplexing the respective outputs from said first and second input channels and outputting a multiplexed signal at a common data transmission rate to a communication network;

15 switcher for alternately routing said outputs from said attribute data processors of said first and second input channels to said multiplexor;

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said first predetermined media source comprises a video data source; and

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said second predetermined media source comprises an audio data source.

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17. A digital data signal receiver comprising:

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demultiplexor for receiving a multiplexed data signal at a common data transfer rate from a communication network, and demultiplexing said multiplexed signal to produce a plurality of 10 data signals and output same to a plurality of output channels;

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each of said output channels comprise attribute data decoder for decoding attribute data appended to each of said data signals; data transmission rate convertor for converting the data transmission rate of a said data signal from said common data 15 transmission rate to a predetermined data transmission rate and outputting same to a second delay; and

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said delay provides a predetermined delay to said data signal before outputting same to a predetermined media reproduction device.

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18. A digital signal transmission device comprising:

sensor for reading data recorded on an optical disc media to produce an audio media source data signal and a video media source data signal;

5 transmitter comprising a first and a second input channel for receiving said audio signal and said video signal from said sensor, respectively;

said first and second input channels each comprise an input for receiving an input signal at a predetermined data 10 transmission rate; delay for delaying said input signal by a predetermined duration before outputting same to a data transmission rate converter; said data transmission rate converter converts the transmission rate of said input signal from said predetermined data transmission rate to a common data 15 transmission rate and outputs same to an attribute data processor; said attribute data processor appends predetermined attribute data to said input signal and outputs same;

multiplexor for multiplexing the respective outputs from said first and second input channels and outputting a multiplexed 20 signal at a common data transmission rate to a communication network; and

switcher for alternately routing said outputs from said attribute data processors of said first and second input channels to said multiplexor.

5 19. A digital signal transmission device comprising:

reproducing head for reading data recorded on a magnetic recording medium to produce an audio media source data signal and a video media source data signal;

transmitter comprising a first and a second input channel for 10 receiving said audio signal and said video signal from said sensor, respectively;

said first and second input channels each comprise:

an input for receiving an input signal at a predetermined data transmission rate; delay for delaying said input signal by 15 a predetermined duration before outputting same to a data transmission rate converter; said data transmission rate converter converts the transmission rate of said input signal from said predetermined data transmission rate to a common data transmission rate and outputs same to an attribute data processor; said attribute data processor appends predetermined attribute data to said input signal and outputs same;

multiplexor for multiplexing the respective outputs from said first and second input channels and outputting a multiplexed signal at a common data transmission rate to a communication network; and

5 switcher for alternately routing said outputs from said attribute data processors of said first and second input channels to said multiplexor.

20. A data transmission device according to claim 19, wherein
10 said magnetic recording medium comprises a magnetic disc medium.

21. A data transmission device according to claim 19, wherein
 said magnetic recording medium comprises a magnetic tape medium.

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